April 2020
900975-001
Rev 01

TouchTunes
An OCTAVE GROUP Company

FRU Installation Guide
Replacing Virtuo Jukebox Touchscreen Glass

Purpose

This document explains how to replace the touchscreen glass on a Virtuo jukebox that is using a 27" display.

NOTE	For the remainder of this document, the name Virtuo refers to both Virtuo and Virtuo II jukeboxes as this FRU kit (P/N 600254-001) is compatible with both jukebox models.

The procedure in this manual applies to monitors with the following part numbers:

- P/N 300955-001
- P/N 300955-002

There is a P/N label on the back of each monitor to distinguish between models. The procedure will indicate where steps differ between models.

Audience

- TouchTunes Virtuo jukebox operators and technicians
- TouchTunes field service and customer support

Estimated Time

30 minutes

Required Personnel

1 technician, 1 assistant

This document includes tasks of the following types:

☐	Software
☑	Mechanical
☑	Electrical

Topics

- Required Tools and Equipment
- Included in the Kit
- Important Safety Information
- Replacing the Touchscreen Glass
- Contacting Technical Support

Required Tools and Equipment

To perform the steps in this installation, the following tools and equipment are required:

- Cross-head screwdrivers, #1 and #2
- Precision flat blade screwdriver or similar tool
- Protective gloves for handling the glass (in case of broken glass)
- Vacuum cleaner (in case of broken glass or debris)
- Anti-static wrist strap
- Torque-limiting screw and nut driver and metric 7 mm socket. Do not use a standard ratchet, which can lead to over-torquing. *A regular nut driver (with 7mm socket) can be used, as long as you avoid over-torquing when tightening the nuts and screws.*

Included in the Kit

Ensure that you have received all required parts before proceeding with this installation.

Part	Quantity	Part Number (P/N)
MON, REPL TS GLASS, SENTONS, 27"	1	300956-001
SUB, CTRL, TOUCH, SENTONS 27"	1	300958-004
MAN, (this document)	1	900975-001

Important Safety Information

WARNING: When performing this procedure or any other maintenance on your jukebox, the jukebox **must** be powered off and its electrical power disconnected.

IMPORTANT: A properly-grounded anti-static wrist band should be worn at all times during the procedure presented in this document.

CAUTION: The touch screen glass weighs approximately 25 lbs. Enlist the help of an assistant when installing the replacement glass.

CAUTION: Use care when handling the glass being replaced, as it can contain sharp and broken pieces. Use care when handling the replacement glass to prevent debris, markings and fingerprints from contacting the interior surface of the glass and the face of the monitor.

Replacing the Touchscreen Glass

1 Press the **MNGR** button on the I/O Board to open the Operator interface main menu.

2 On the Virtuo screen, press the **REBOOT** button.

3 When you hear the BIOS beep, power down Virtuo by setting the rocker switch on the power strip to the off (O) position.

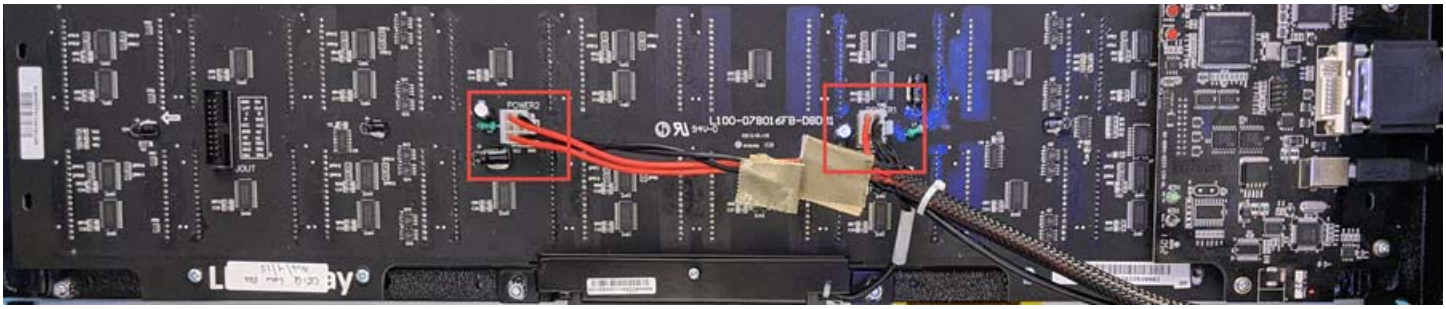
IMPORTANT: Never shut down or unplug Virtuo without first performing a reboot and waiting for the BIOS beep. Doing so can cause damage to the hard drive and make it unusable.

4 Unplug the AC power cable from the wall socket.

5 Disconnect all of the connectors from the bottom of the display (this includes power, serial, and DVI).

Remove connections from bottom of the touchscreen monitor (300955-001 monitor model shown)

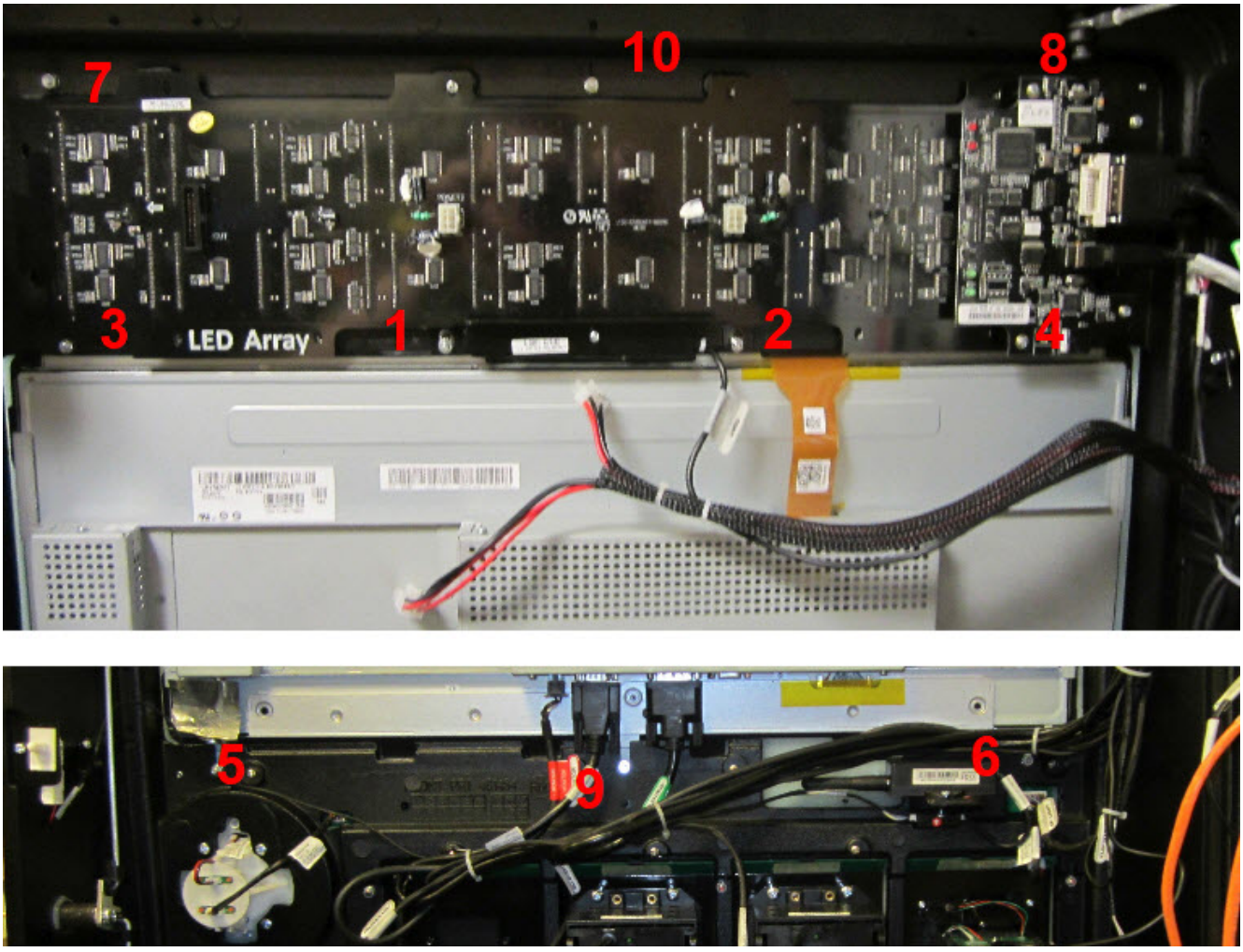
6 Disconnect the cables that connect to the LED array to facilitate access to the touchscreen monitor and glass.



Connections on the LED Array

7 Mark the level where the camera is currently installed. This should be done to ensure that the camera will be at the same level when you re-install it later in this procedure.

8 The touchscreen is secured to the inside of the door with 10 nuts fastened to studs on the rear of the unit, and is removed by lifting it away from the exterior of the Virtuo jukebox. Using a torque-limiting nut driver, remove the nuts that secure the touchscreen glass and monitor to the Virtuo front door, starting with the two nuts that hold the camera in place. Follow the numbered sequence shown in the following figure for removing the nuts. The numbered sequence follows an X pattern.



Sequence of nuts to remove (300955-001 monitor model shown)

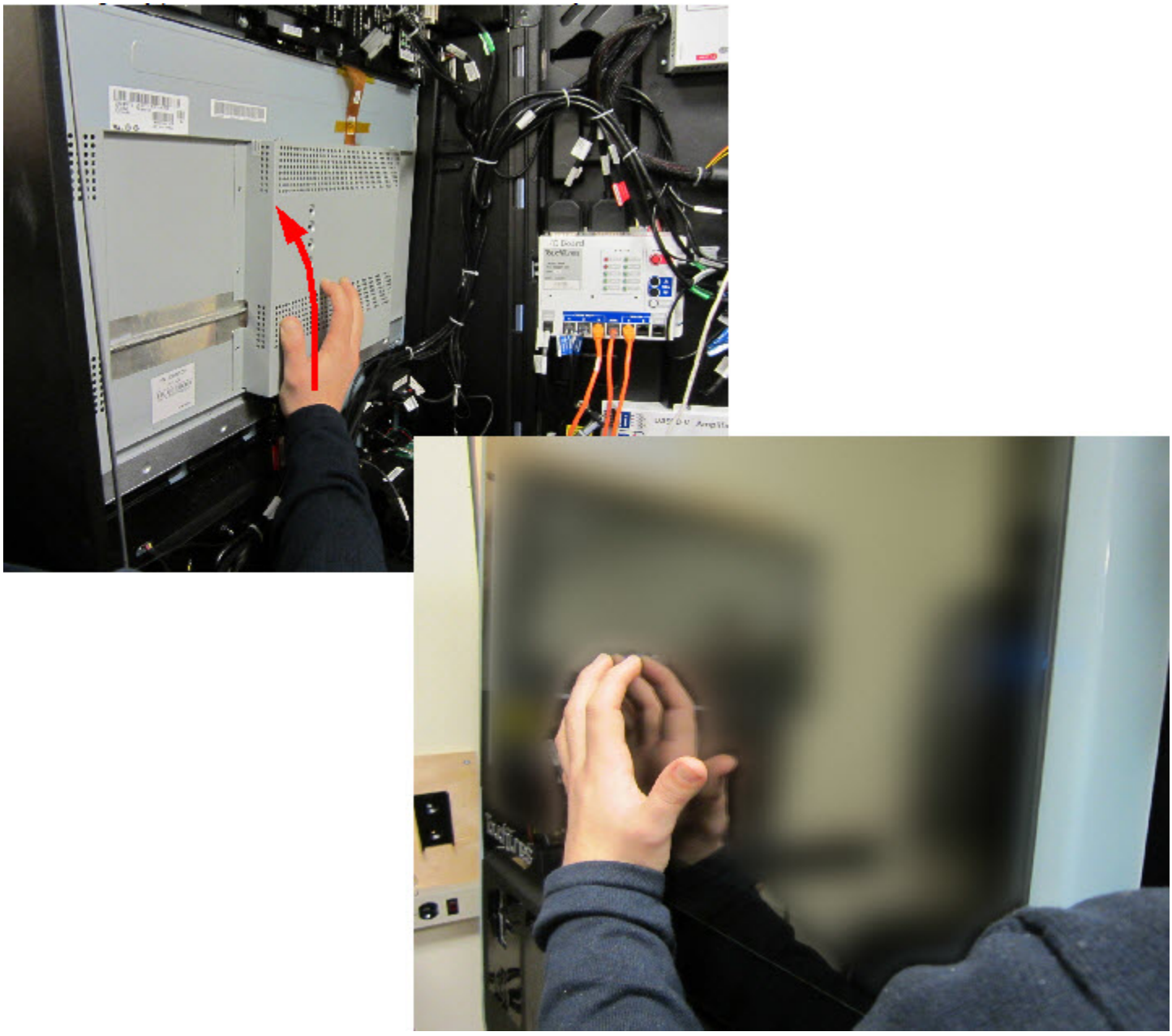
After the nuts that held the camera have been removed (items 1 and 2 in the previous figure), set the camera aside while you install the replacement glass.

Set aside all the nuts you remove as you will be re-using them later. Do not lose the nuts as there are no replacement nuts in the kit.

IMPORTANT: Before you remove the final (top-middle) nut, ensure that you or an assistant is holding the glass in place from the front.

9 Loosen the screws on the brand bar. Do NOT remove them. This is to ensure that you can safely remove the monitor/glass assembly without damaging it.

10 With one hand positioned on the bottom rear of the monitor and the other supporting the glass and monitor from the front, gently push the unit forward and lift it out and away from the Virtuo door.



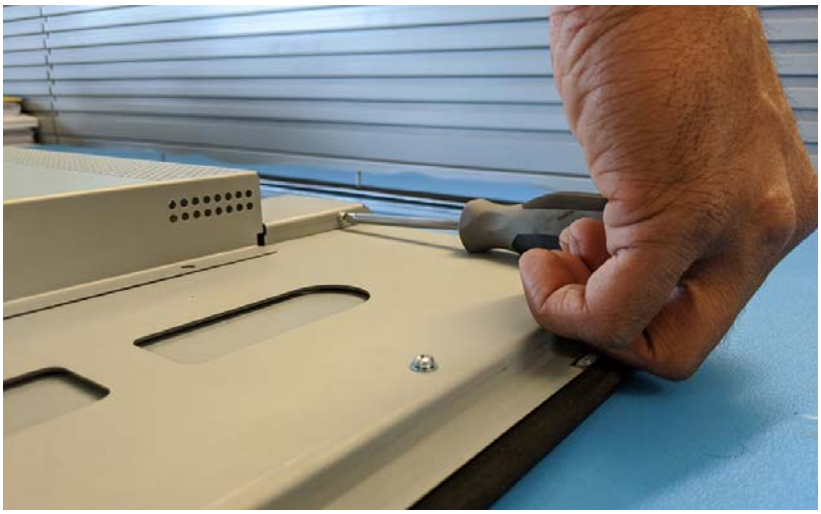
Remove touchscreen monitor and glass from Virtuo (300955-001 monitor model shown)

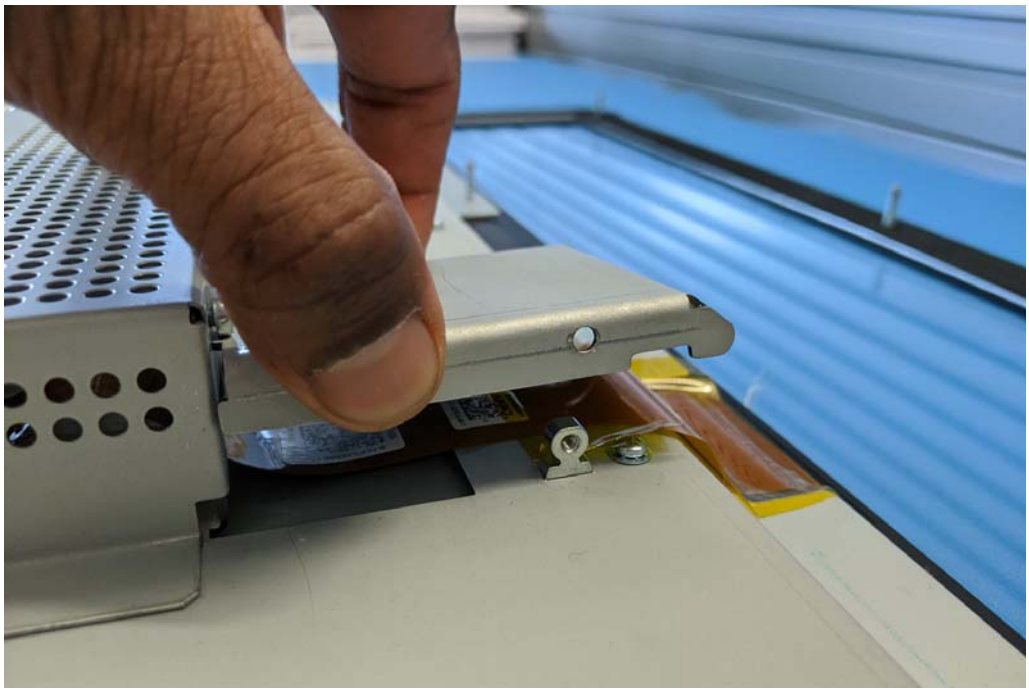
11 Lay the touchscreen glass and monitor face-down on a flat surface that is preferably covered with a soft cloth or other padding that will prevent damage to the glass and monitor.

12 Remove the 4 screws that hold the back cover of the monitor in place. These are on the top and bottom of the cover.

Remove cover screws (300955-002 monitor model shown)

13 For monitor model 300955-002, remove the 2 screws that hold the small metal cover in place at the top of the monitor. Set the cover and screws aside to be re-installed later.





Remove top metal cover for monitor model 300955-002

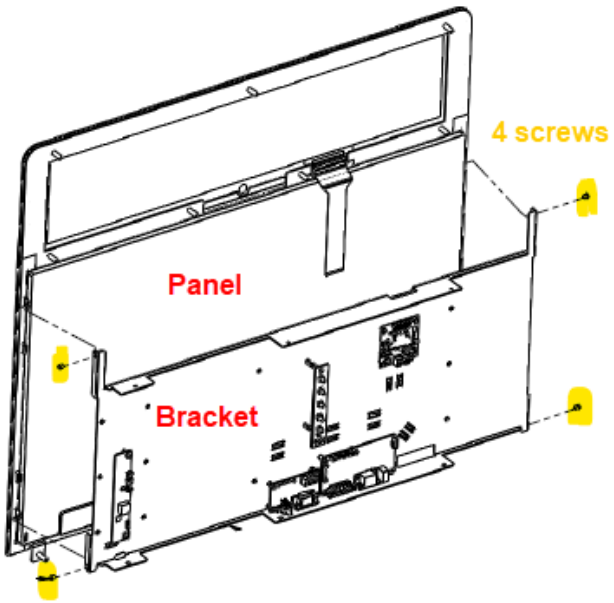
14 For model 300955-001 before removing the screws in the next step, 2 additional cables must be unplugged: the backlight ctrl cable (highlighted in red in the following figure) and the LVDS video cable (highlighted in green in the following figure). For the backlight ctrl cable, you must remove the aluminum tape before it is unplugged. Set the tape aside for later re-use.

Monitor model 300955-001 cables to remove

15 Remove the 4 screws that hold the monitor to the touchscreen glass. These are on either side of the monitor and glass.

Remove monitor screws (300955-001 monitor model shown)

For the 300955-001 model, once these four screws (highlighted in yellow in the following figure) have been removed, the bracket and LCD panel come apart from each other. These 2 parts must be re-installed separately later in this procedure.

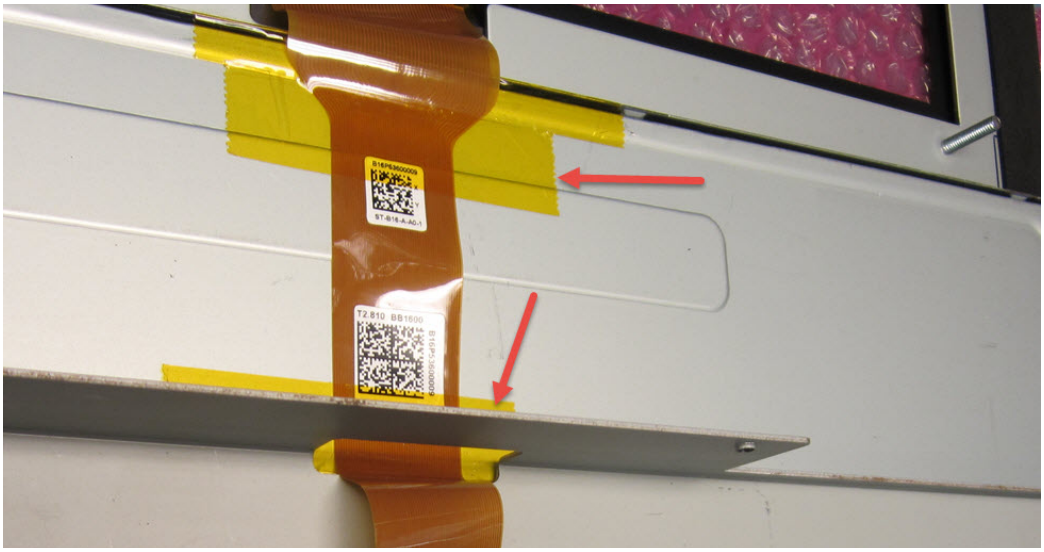


300955-001 model bracket and LCD panel

16 Pull off the back cover and set it aside for later.

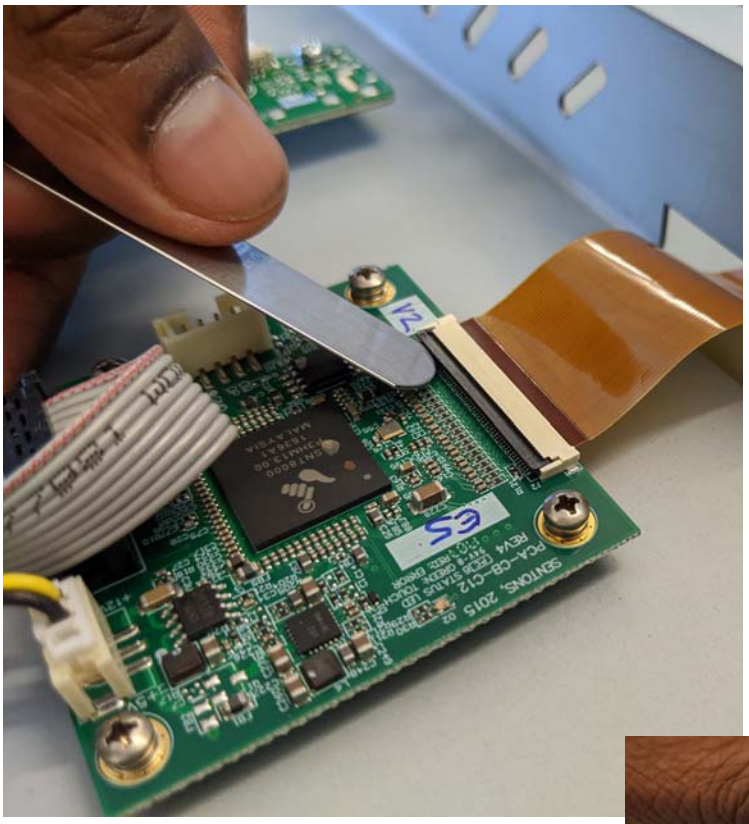
IMPORTANT: From this point on, and until the back cover has been screwed back on, an anti-static wrist strap should be worn while manipulating the monitor's internal electronics, to avoid electro-static discharges which could damage the delicate electronics.

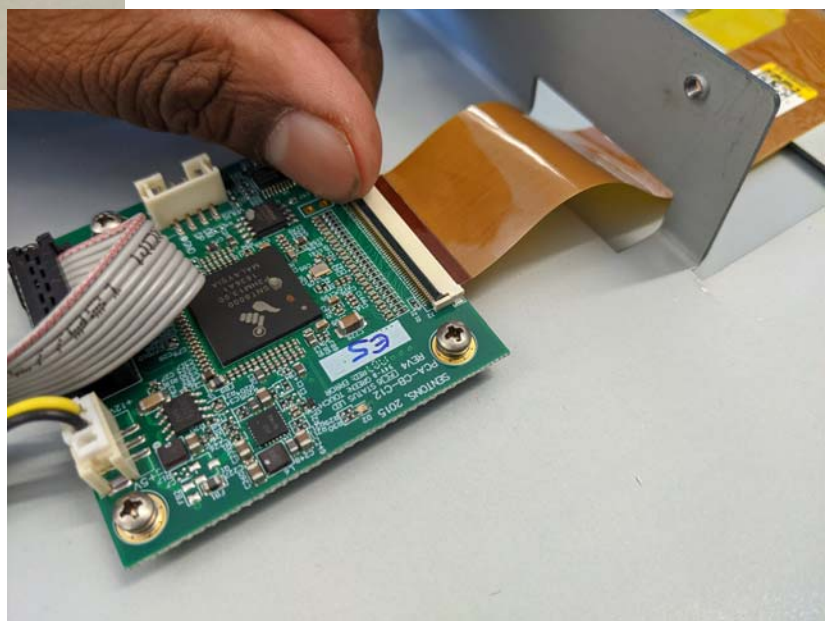
17 Delicately pull off the pieces of Kapton tape indicated in the following figure so that the ribbon cable can be detached from the monitor control board. Set this tape aside as you will be re-using it in a moment.



Remove Kapton tape

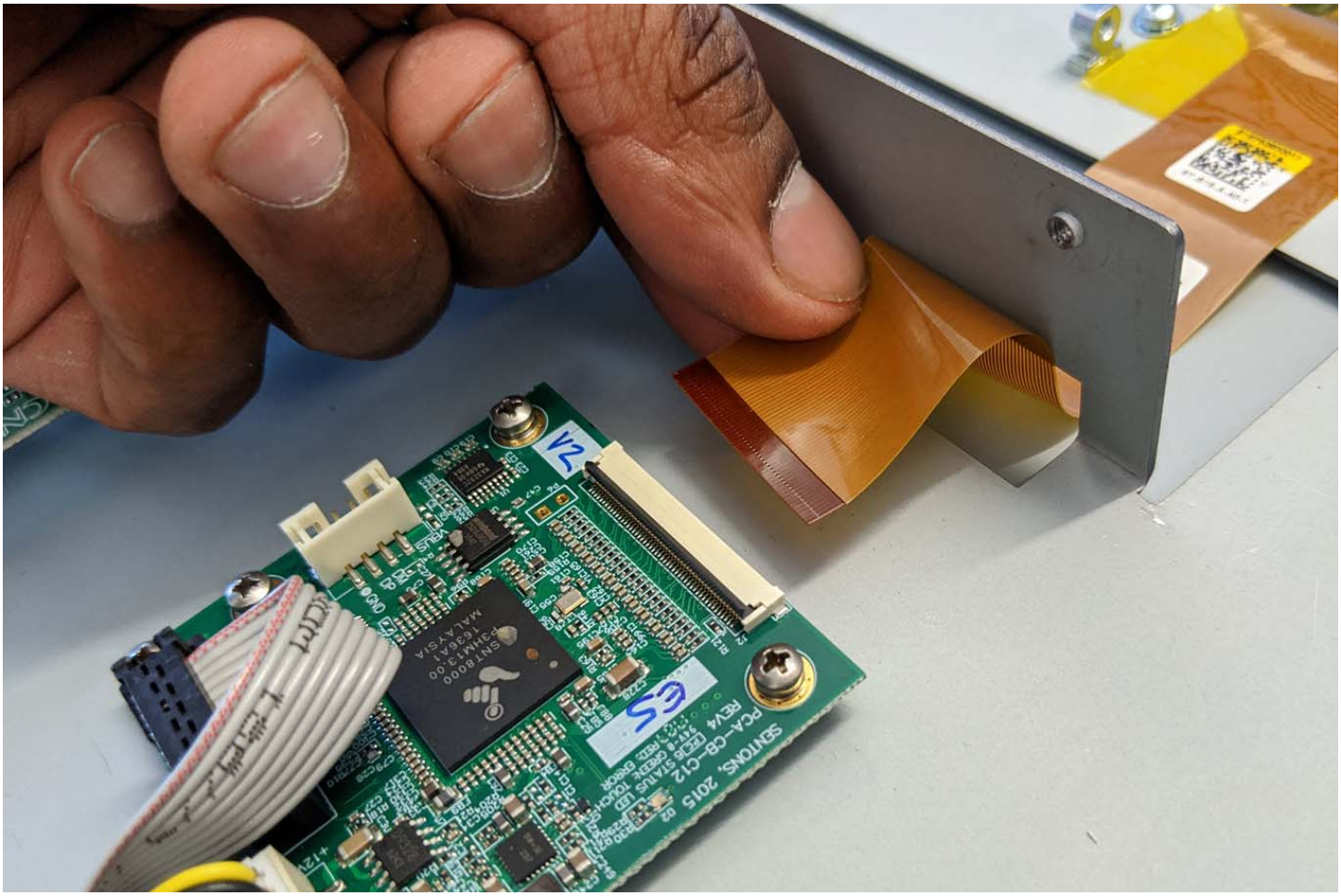
18 Using a thin, flat tool, carefully lift up the small black tab on the ribbon connector and then push off the tape connection.





Remove tape connection

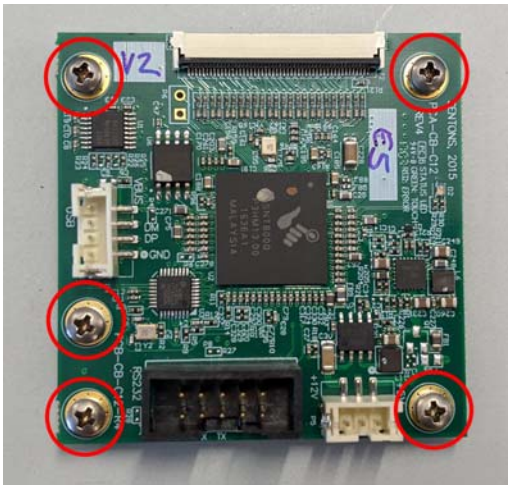
19 Pull out the ribbon.



Remove ribbon

20 Disconnect the remaining cables on the control board.

21 Remove the 5 screws that hold the control board to the monitor (highlighted in red in the following figure) and set them aside to be re-used. Do not lose the screws as there are no replacement screws in the kit.



Control board screws

22 Remove the control board.

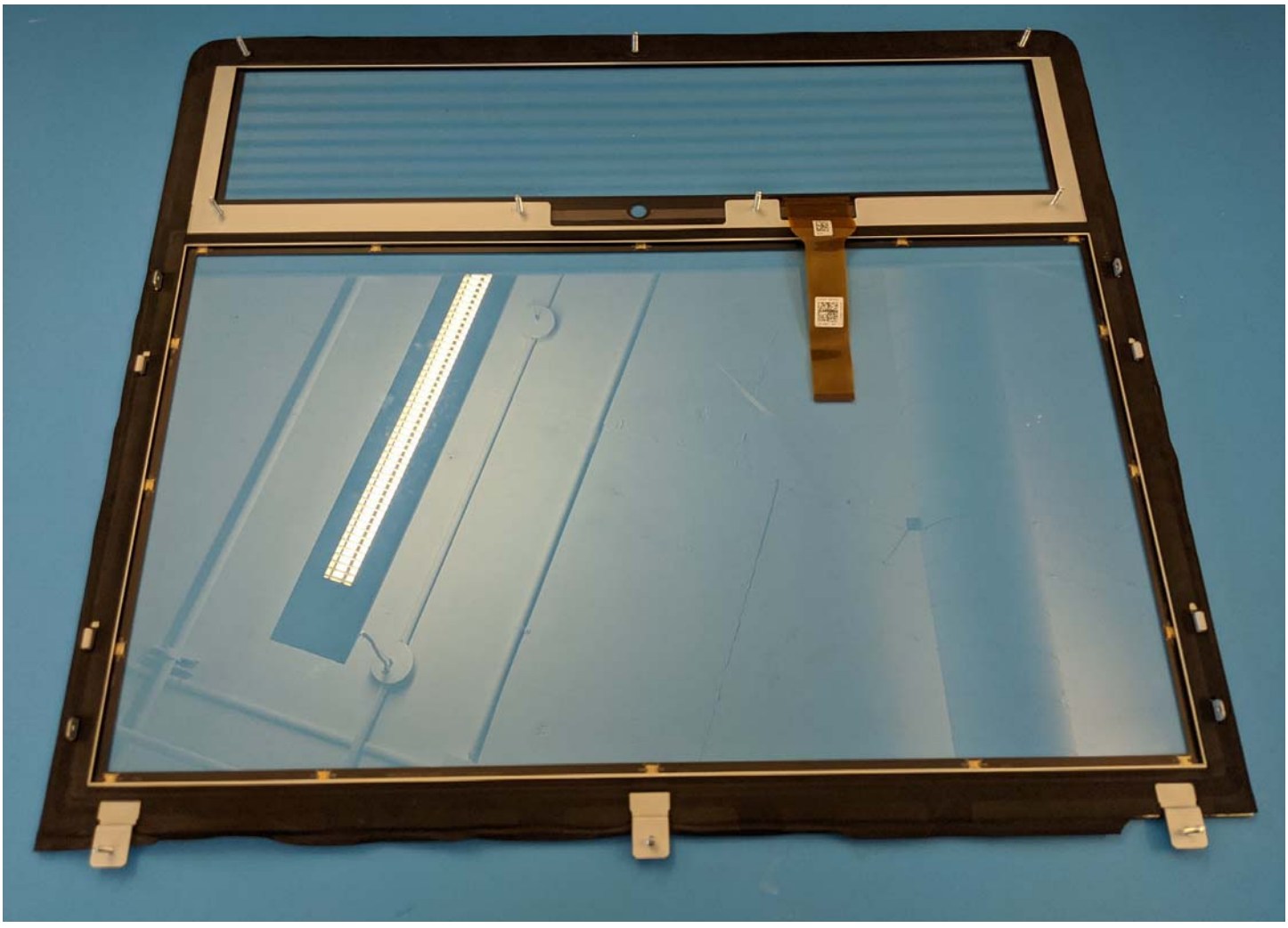
NOTE	Individual control boards are paired with particular touch glasses, and cannot be re-used across different touch glasses.

23 Pull the monitor off the touchscreen glass and lay it flat.

NOTE	TouchTunes recommends that you wear a pair of protective gloves when performing the next steps to prevent the monitor and interior of the replacement glass from collecting any debris.

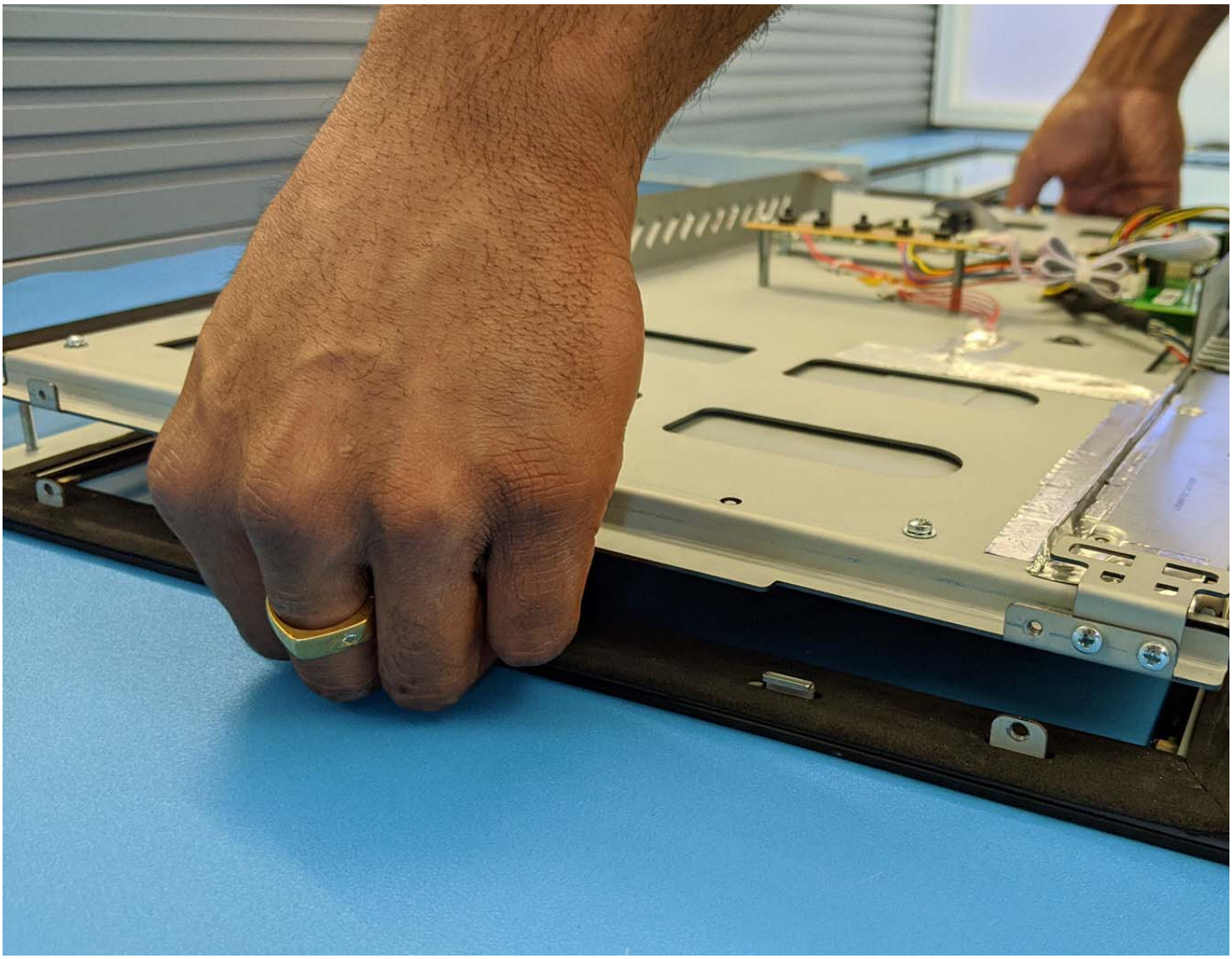
24. If the touchscreen glass was broken, use a vacuum cleaner to remove any glass residue and then safely dispose of the glass and associated debris.

25 Place the replacement touchscreen glass assembly on a clean, flat surface. Make sure that the glass does not get scratched. Lay the touchscreen glass assembly on clean cloth material to avoid the risk of scratching the glass.



Replacement touchscreen glass assembly

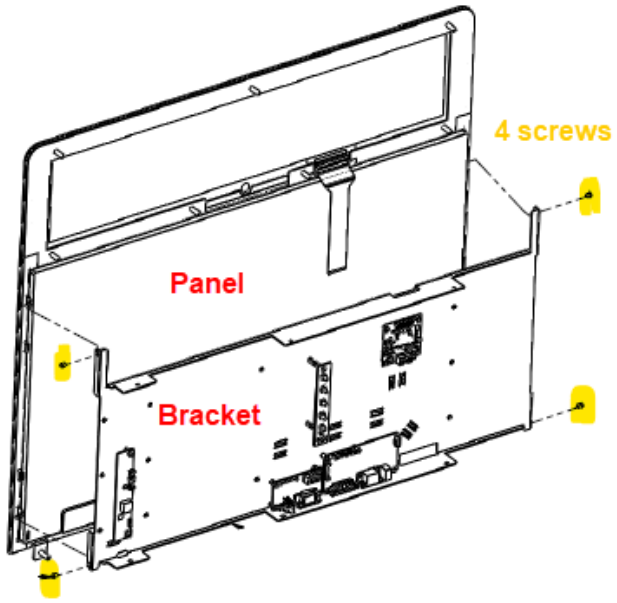
26 For the model 300955-002, insert the monitor into position on the touchscreen glass, lifting the ribbon to keep it from getting stuck between the glass and the monitor. Fasten the screws on both sides.



Place monitor on touchscreen glass (300955-002 model shown)

IMPORTANT: When performing the following steps, use the proper tool (torque-limiting screw driver) and DO NOT OVERTIGHTEN the screws. Doing so may cause damage to the LCD panel. TouchTunes is **NOT** responsible for equipment damage caused by improper installation.

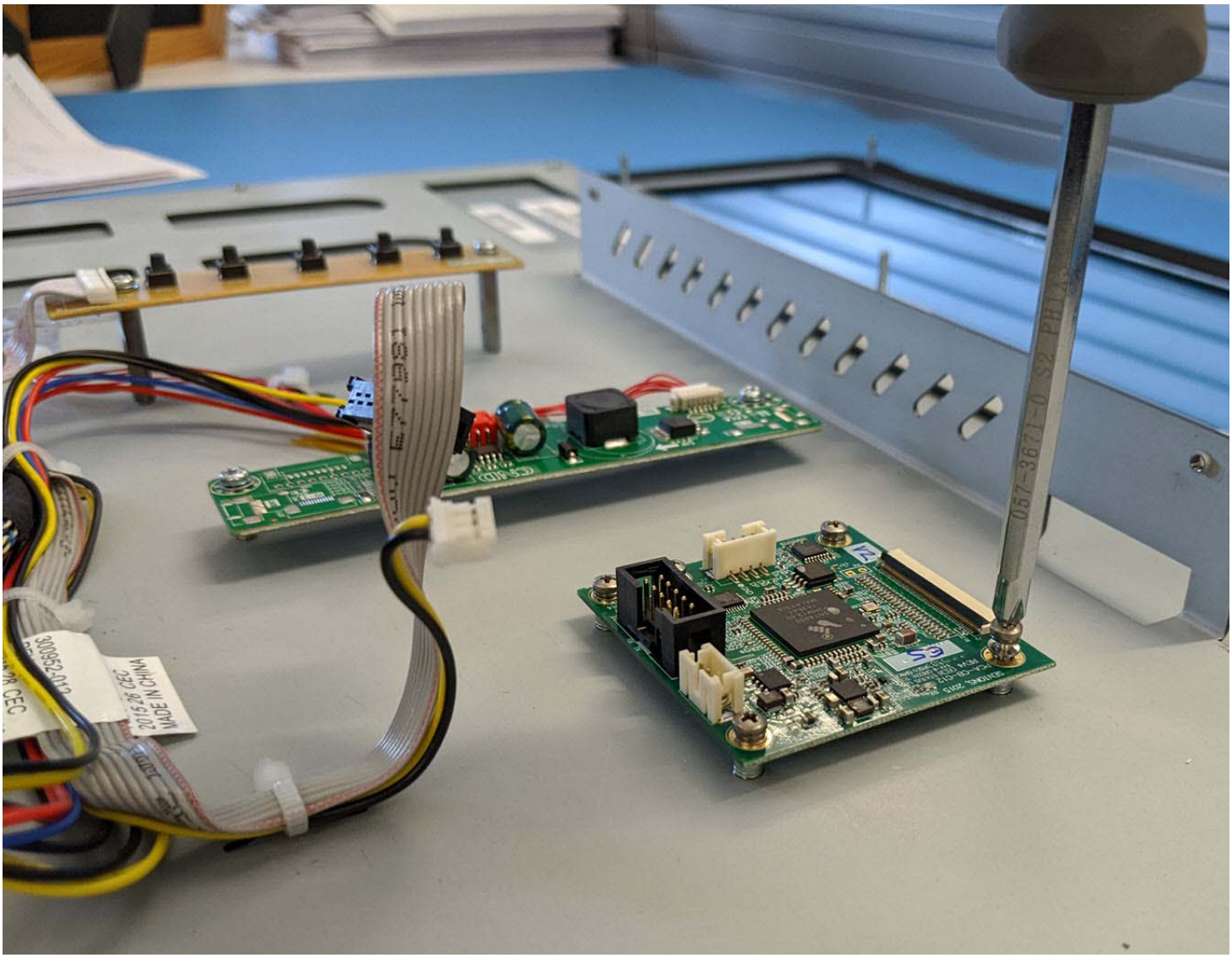
For the 300955-001 model, place the LCD panel on the touchscreen glass taking care not to damage the Flex cable (ribbon). Then place the bracket on top of the panel. Fasten the screws on both sides. Using a torque-limiting screw driver, gradually torque all 4 screws to 6 Lbs-in.



300955-001 model bracket and LCD panel

27 For the monitor model 300955-001, reconnect the LVDS and backlight ctrl cables. For the backlight ctrl cable, replace the aluminum tape that you set aside earlier. See figure Monitor model 300955-001 cables to remove for the cable connection locations.

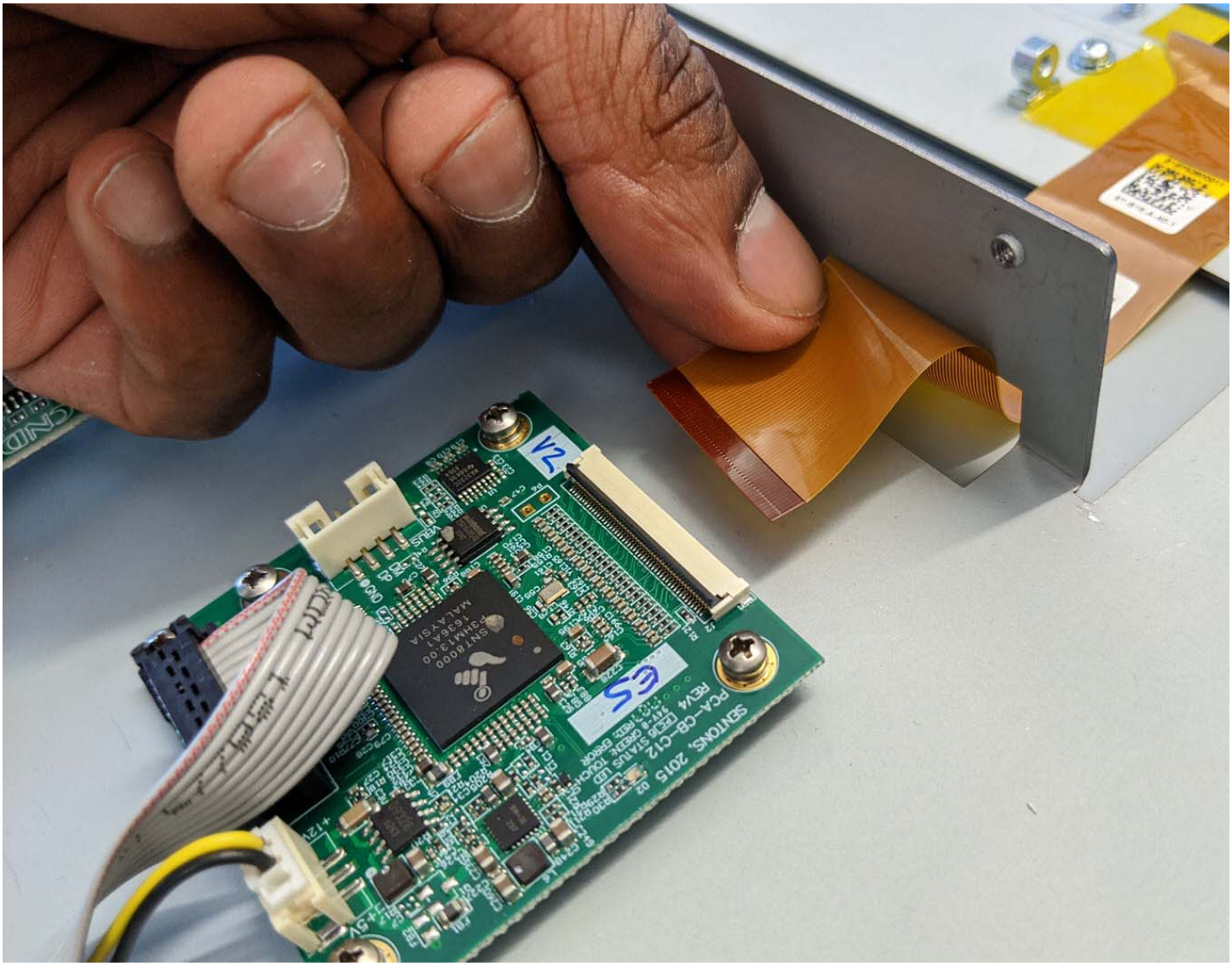
28 Take the replacement control board (included in this FRU kit) out of its packaging, and fasten it to the monitor using the 5 screws you removed earlier.



Fasten control board screws

29 Re-connect the 2 cables you disconnected earlier.

30 Insert the ribbon into its connector and then flip the black tab down to secure the ribbon.



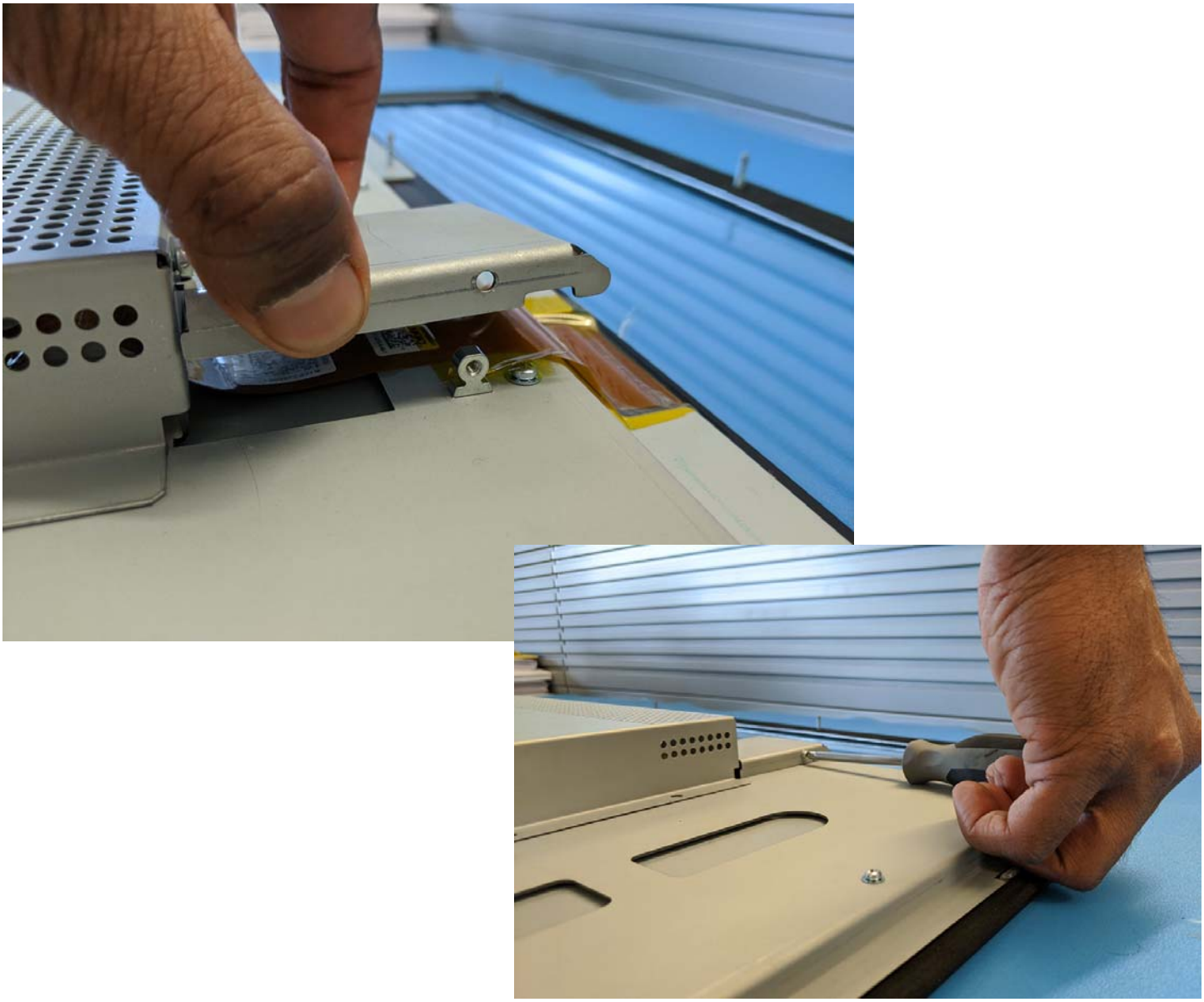
Insert ribbon

31 Using the tape that was set aside earlier, secure the ribbon to the monitor, being careful to leave a small amount of slack at both ends to avoid putting stress on the ribbon.

32 Replace the monitor's back cover and fasten it using the 4 screws you removed earlier. See figure Remove cover screws (300955-002 monitor model shown) for the location of the screws.

33 Fasten the monitor to the touchscreen glass using the 4 screws you removed earlier. See figure Remove monitor screws (300955-001 monitor model shown) for the location of the screws.

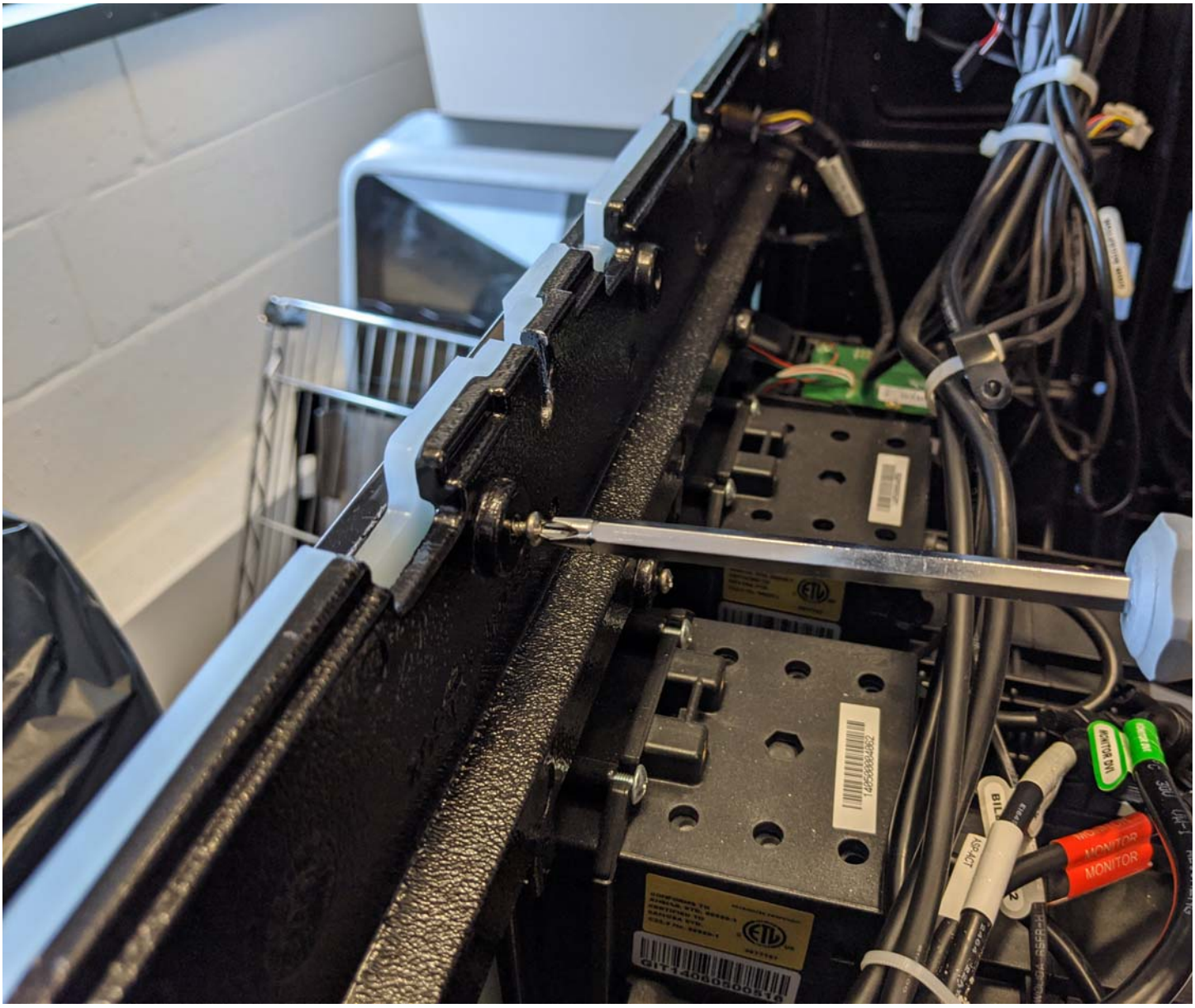
34 For the monitor labeled with P/N 300955-002, place the small metal cover at the top of the monitor so that it protects the ribbon. Fasten the cover in place. This step does not apply to monitor model 300955-001.



Place and fasten small cover

35 Bring the re-assembled touchscreen glass and monitor over to the Virtuo jukebox.

36 Loosen the brand bar screws slightly to ensure the touchscreen glass gasket does not get damaged when performing the next step.



Loosen brand bar screws

37 Gently insert the unit into the Virtuo jukebox. The touchscreen glass gasket should be placed inside between the brand bar and the plastic. When moving to the interior of the jukebox, use one hand to continue supporting its front on the exterior.

Place unit on the jukebox

IMPORTANT: Ensure the glass is properly seated on the Virtuo jukebox. Failure to do so can cause the glass to break.

38 Re-fasten the nuts (finger-tight) to their studs except for the two nuts for mounting the camera following the numbered sequence shown in the figure Sequence of nuts to remove (300955-001 monitor model shown). The numbered sequence follows an X pattern.

39 Place the camera assembly onto the top of the monitor at the level you marked in step 7.

40 Fasten the camera assembly to the monitor with the two remaining nuts (finger tight), make sure the USB cable is routed toward the right, and re-align the camera with the opening in the black backing of the touchscreen glass.

IMPORTANT: When performing the following steps, use the proper tool (torque-limiting nut driver) and DO NOT OVERTIGHTEN the nuts. Doing so may cause damage to the LCD touch screen. TouchTunes is **NOT** responsible for equipment damage caused by improper installation.

41 Gradually torque all 10 nuts to 10 in.-lbs. This balances the tension across the surface of the glass, which will allow touch tracking to function properly.

IMPORTANT: Do not over-tighten the nuts! Improper fastening of the touchscreen glass to the door may cause damage to the unit and adversely affect performance.

42 Tighten the brand bar screws loosened in step 36.

43 Reconnect the connectors on the monitor's bottom panel. See figure Remove connections from bottom of the touchscreen monitor (300955-001 monitor model shown) to view cable connections. Although the figure shows monitor model 300955-001, the connections are the same for both models.

44 Reconnect the cables that go to the LED Array. See figure Connections on the LED Array to view cable connections.

45 Plug the AC power cable back into the wall socket and then power on Virtuo.

46 Recalibrate the touchscreen: Once Virtuo is fully booted and showing the customer interface, press and hold the **MNGR** button on the I/O Board until the calibration screen is shown, then follow the on-screen prompts to complete the calibration.

47 Make sure the cursor on the screen follows your finger when you touch the glass.

48 Verify that the camera is still correctly aligned and oriented. If the camera is partly obscured by the edges of its hole in the glass backing, loosen the two nuts and adjust the camera's position. If the camera is pointing at too high or too low an angle, adjust the angle using the adjustment screw. Turn the screw a half turn at a time, checking the Preview screen between each half turn. The Preview screen is access from the *Main* menu → *HARDWARE* → *Camera*. For more on the proper camera angle, see the *PhotoBooth Camera Bracket Installation and Alignment* guide (P/N 900631-001, found at http://productwarranty.touchtunes.com in the Product & Technical Documentation → PhotoBooth section).

49 Test the functionality of the monitor using the 5 buttons located on its back panel.

Button	Control	Function
1	ENTER	Selects the current choice in the on-screen display (OSD).
2	UP	Increases brightness. While viewing OSD: - Selects OSD choice counterclockwise. - Increases the value of OSD adjustment choice.
3	POWER	Turns the monitor ON/OFF.
4	DOWN	Decreases brightness. While viewing OSD: - Selects OSD choice clockwise. - Decreases the value of OSD adjustment choice.
5	MENU	Displays/exits the OSD menus.

You have completed the replacement of the Virtuo touchscreen glass.

Contacting Technical Support

If you need help or have questions about this guide, call the TouchTunes Tech Line at 888-338-5853.

To help us assist you more effectively with problem reports, the following information may be required when contacting TouchTunes support:

- Jukebox model and ID
- Operator ID
- Serial number of the component you believe to be defective
- Date/time of the problem
- Actions performed immediately before the problem occurred
- Any additional comments relevant to the problem

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